



ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

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BRUCE RAUNER, GOVERNOR

LISA BONNETT, DIRECTOR

February 1, 2016

The Honorable Bruce Rauner
Governor of Illinois
207 Statehouse
Springfield, IL 62706

Honorable Members
Illinois General Assembly
Statehouse
Springfield, IL 62706

Dear Governor Rauner and Members of the General Assembly:

I am pleased to submit to you the *E-Waste Program Review* pursuant to the Electronic Products Recycling and Reuse Act. This report fulfills Illinois EPA's statutory directive to review the electronic waste ("e-waste") program established by the Act, determine if the program requires any modification, and issue a report that includes specific recommendations for any necessary or appropriate modifications to the program.

To that end, this report identifies and documents e-waste recycling challenges faced by manufacturers, collectors, recyclers and local governments in Illinois and makes specific recommendations for program improvements. Our program review coincided with stakeholder discussions during the 2015 legislative session concerning problems with e-waste management in the State and the enactment of P.A. 99-13.

Illinois EPA is committed to working with you and our stakeholders to ensure that residential e-waste is managed safely.

Sincerely,

A handwritten signature in black ink that reads "Lisa Bonnett".

Lisa Bonnett

Director



ELECTRONIC PRODUCTS RECYCLING AND REUSE ACT

Report to the Illinois Governor and General Assembly

E-Waste Program Review



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Executive Summary

From its review of the electronic waste (“e-waste”) recycling program created by the Electronic Products Recycling and Reuse Act (“Act”), Illinois EPA has concluded that mandated manufacturer recycling goals do not result in the sufficient collection of residential e-waste. The Act’s underlying premise, that these goals would create a robust collection program that would sustain a healthy recycling market, has turned out to be flawed.

The safe management of e-waste will require a multi-faceted solution. In this report, Illinois EPA recommends amending the current e-waste recycling program to provide a collection infrastructure that is available year-round, accepts all devices, and is distributed throughout the State based on population density.

Illinois EPA would like to thank everyone who participated in this program review process. These individuals represent a diverse and experienced group of local governments, collectors, recyclers, and manufacturers. Their input has been essential to this report.

Background

The Electronic Products Recycling and Reuse Act took effect on September 17, 2008, to “set forth procedures by which the recycling and processing for reuse of covered electronic devices (“CEDs”) will be accomplished in Illinois.” Under the Act, CEDs are defined to include the following when taken out of service from a residence in Illinois:

Televisions	Facsimile Machines	Scanners
Computer Monitors	Small-Scale Servers	Electronic Mice
Printers	Videocassette Recorders	Digital Converter Boxes
Computers (laptop, notebook, netbook, tablet, desktop)	Portable Digital Music Players	Cable Receivers
Electronic Keyboards	Digital Video Disc Players	Satellite Receivers
	Video Game Consoles	Digital Video Disc Recorders

Effective January 1, 2012, the Act instituted a ban on the disposal of any of the above devices in Illinois landfills. To provide for the large-scale diversion of e-waste from landfills, the Act required manufacturers that sell CEDs in Illinois to register with the Illinois EPA, pay a registration fee, and meet annual e-waste recycling goals. For program year 2012, each manufacturer was required to recycle or reuse at least 40 percent of the total weight of the CEDs that the manufacturer sold in Illinois during the calendar year beginning 2010. For program years 2013 and 2014, each manufacturer was required to recycle or reuse at least 50 percent of the total weight of the CEDs that the manufacturer sold in Illinois during the calendar year two years before the applicable program year. To meet these goals, the Act allows manufacturers to count not only recycled CEDs, but also recycled eligible electronic devices (“EEDs”) which are defined as mobile phones, portable digital assistants, computer cables, and zip drives.

In addition to setting forth procedures by which e-waste is to be recycled in Illinois, the Act requires Illinois EPA to prepare an annual report to the Governor and General Assembly that documents the e-waste program's performance during the previous year. These reports, available on the Illinois EPA's website at <http://www.epa.illinois.gov/topics/waste-management/electronics-recycling/legislative-reports/index>, contain data on the weight of CEDs and EEDs recycled or processed for reuse along with relevant information concerning e-waste education and outreach, use of manufacturer collection credits, and administrative citations and other enforcement actions taken under the Act.

On July 10, 2015, Public Act 99-13 ("P.A. 99-13") amended the Electronic Products Recycling and Reuse Act. Most notably, the amendments:

- Increase manufacturers' e-waste recycling goals and assign higher goals to manufacturers of televisions and computer monitors. For program year 2015, the total annual recycling goal is 30.8 million for television and monitor manufacturers and 15.8 for manufacturers of all remaining CEDs.
 - For program years 2016 and 2017, the total annual recycling goal is 34.0 million for television and monitor manufacturers and 15.6 million for manufacturers of all remaining CEDs. Individual manufacturer's annual recycling goals are in proportion to that manufacturer's market share of their CEDs sold in Illinois during the calendar year two years before the applicable program year.
 - For program year 2018, each manufacturer shall recycle or reuse at least 50 percent of the total weight of the covered electronic devices that the manufacturer sold in Illinois during the calendar year two years before the applicable program year.
- Allow a carry-forward collection credit for manufacturers;
- Require recyclers and refurbishers to acquire certification from an independent, third-party certification body;
- Allow the placement of cathode-ray-tube (CRT) glass from televisions and computer monitors into retrievable storage cells at a landfill as a means of meeting a manufacturer's recycling goal; and
- Restructure the penalties assessed to manufacturers so that penalties are triggered at a higher threshold.

The revised goals and new credit apply to program years 2015, 2016, and 2017.

Program Review Process

The Act mandates Illinois EPA to perform a thorough review of the e-waste recycling program created by the Act, including the sufficiency of e-waste recycling goals; the fairness of the formula used to establish individual manufacturer goals; the adequacy of the credit and penalty components that have been instituted; and the adequacy of the collection systems that have been implemented. As part of this review, the Act directs the Illinois EPA to perform three specific tasks:

1. To solicit and review written comments by July 1, 2015 regarding all aspects of the e-waste program for the purpose of determining if the program required any modifications.

2. To hold a public hearing by August 1, 2015 to present findings from the comments and to solicit additional comments to be submitted in writing no later than October 1, 2015; and
3. To submit a report to the Governor and General Assembly by February 1, 2016 containing Illinois EPA's recommendations for any necessary and appropriate modifications to the e-waste program.

This report fulfills task three and documents the successful completion of tasks one and two.

On June 1, 2015, Illinois EPA emailed an electronic survey (Appendix A) to approximately 350 stakeholders; 154 individuals responded (44 percent). The survey population included all collectors, recyclers, refurbishers and manufacturers registered with the Illinois EPA in program year 2015, along with units of local government, trade associations, and other individuals active in the development of P.A. 99-13.

The survey asked 18 questions related to the following issues:

1. Sufficiency of the annual statewide recycling goals;
2. Fairness of the formulas used to determine individual manufacturer goals;
3. Adequacy of, or the need for, continuation of several specific credits that may be applied toward manufacturers' recycling and reuse goals;
4. Any temporary rescissions of county landfill bans granted by the Illinois Pollution Control Board;
5. Adequacy of, or the need for, the penalties listed in the Act; and
6. Adequacy of the collection systems that have been implemented as a result of the Act, with a particular focus on promoting the most cost-effective, convenient collection system possible for Illinois residents.

On July 29, 2015, Illinois EPA held a public meeting in Springfield to present the survey findings and to take additional comments and questions. Presentation materials (Appendix B) included the survey results, program statistics, information about e-waste mismanagement, and an overview of how e-waste is regulated by other States. Fifty-one people attended the meeting, 14 of whom presented oral comments. These commenters were Champaign County, Clay County Rehabilitation, Consumer Electronics Association, Eagle Enterprises Recycling, Illinois Manufacturers Association, Illinois Retail Merchants Association, Jackson County Health Department, Product Stewardship Council, Sims Recycling Solutions, Solid Waste Agency of Lake County, Solid Waste Agency of Northern Cook County, Supply Chain Inc., Transparent Planet, and Will County. During the meeting, Illinois EPA informed participants that all written comments would be shared with stakeholders via email to ensure transparency during the program review.

On August 6, 2015, the Illinois EPA distributed the written comments submitted at the public meeting along with follow-up responses to two questions asked at the meeting. The distribution list included the same individuals to whom it sent the electronic survey, as well as any other person who requested to be added to the distribution list or who attended the public meeting. As stated in the August transmittal message, the Illinois EPA recommended that stakeholders review the public meeting comments and provide additional feedback from their perspective.

The formal comment period remained open until October 1, 2015. On October 2, 2015, Illinois EPA sent to stakeholders the written comments received between July 29, 2015, and October 1, 2015. In the August and October emails the Illinois EPA transmitted a total of 93 pages of comments to the stakeholders.

To better understand the different viewpoints of collectors, recyclers, local governments and manufacturers, the Illinois EPA hosted separate follow-up meetings for each of those groups to allow for more in-depth discussions of their concerns. Although the follow-up meetings were held to discuss the concerns of each particular stakeholder group, the meetings were open for anyone to attend.

- Attendees at the meeting for collectors, held October 19, 2015, included representatives of Will County, the Solid Waste Agency of Lake County, and Eagle Enterprises Recycling. Call-in participants at the meeting included representatives from Champaign County, DeKalb County, DuPage County, Kane County, Ogle County, the Solid Waste Agency of Lake County, COM2 Recycling, Goodwill of the Heartland, the City of Chicago, and USEPA Region 5.
- Attendees at the meeting for registered recyclers, held October 27, 2015, included representatives from BLH Computers and Sims Recycling. Call-in participants at the meeting included representatives from COM2 Recycling, Dynamic Recycling, Elgin Recycling, eWorks, Goodwill of the Heartland, Kane County, Supply-Chain Services, and Vintage Tech Recyclers.
- Attendees at the meeting for local governments, held October 29, 2015, included representatives from Jackson County, Macon County, Madison County, the City of Monmouth, Perry County, the Solid Waste Agency of Lake County, the Solid Waste Agency of Northern Cook County, Will County, and BLH Computers. Call-in participants at the meeting included representatives from Boone County, Champaign County, Cook County, DeKalb County, DuPage County, the City of Galesburg, Kane County, Ogle County, Orland Park Township, the City of Urbana, and USEPA Region 5.
- Attendees at the meeting for manufacturers, held November 2, 2015, included representatives from ComTIA, the Consumer Electronics Association, the Illinois Chamber of Commerce, the Illinois Manufacturers' Association, the Illinois Retail Merchants Association, Panasonic, Samsung, Shattuck & Associates, USMe, and Vizio. Call-in participants at the meetings included representatives from Acer, Dell, DuPage County, Hewlett Packard, and the Solid Waste Agency of Northern Cook County.

Illinois EPA used the same agenda for each of the follow-up meetings (Figure 1), and asked for stakeholders' thoughts on the following specific issues related to common themes identified from stakeholder comments: e-waste collection issues, recordkeeping and reporting requirements, and collection cost issues. Appendix C identifies the stakeholders who participated in each of the meetings and/or submitted comments.

On December 2, 2015, Illinois EPA shared the findings and recommendations from its program review in a public meeting in Springfield to which all stakeholders were invited. Approximately 45 stakeholders participated, either in person or by phone.

Recommendations

If the State continues a policy of banning electronic devices from landfill disposal, the e-waste collection infrastructure needs to be expanded and stabilized to provide collection opportunities in more areas of the State, year round, and for all devices. To that end, the Illinois EPA recommends the following:

- Each county with a population density that is greater than 50 persons per square mile should have at least one collection location that is open year round and that accepts all devices, including CRTs. At present, 48 counties, representing more than 93 percent of the State's population, have a population density that is greater than 50 persons per square mile. See Figure 2 and the table below.
- The 12 most urban counties and the City of Chicago should have additional collection locations proportional to their population densities, as set forth in the table below.

Recommended Minimum Coverage Areas Based on Population Density

50-249 persons per square mile	Requires 1 collection site per county	36 counties – see Figures 4 and 5.
250-499 persons per square mile	Requires 2 collection sites per county	Peoria, Rock Island, Kendall, Madison and St. Clair
500-749 persons per square mile	Requires 3 collection sites per county	McHenry and Winnebago
750-999 persons per square mile	Requires 4 collection sites per county	Kane and Will
1000-4999 persons per square mile	Requires 5 collection sites per county	Lake, DuPage, and Cook without Chicago
5000+ persons per square mile	Requires 10 collection sites per unit of government	City of Chicago

Any changes to the current program will be the subject of continued negotiation among the stakeholders. These recommendations are a starting point only, which is why this report does not include specific implementation details or prescriptions about statutory amendments that are needed to effectuate these changes.

Key issues that will require discussion among the stakeholders include:

- Collection financing.
- Collection infrastructure allocations for manufacturers.
- Accommodations for manufacturers with retail site collections and mail-back programs.
- Definition of “open year-round” for the population density being served.
- Adequate outlets to ensure safe management of accumulated e-waste.

Findings

Reported Problems with Collection Infrastructure

a. The State's E-Waste Collection Infrastructure Is Underdeveloped in Some Areas.

In 36 percent of Illinois counties, there were no registered e-waste collection locations for program year 2015 (See Figure 3). The number of registered collection locations falls each year. When combined with a landfill ban, the result is a lack of reliable e-waste disposal outlets for Illinois residents, especially in rural areas downstate. This lack of access to e-waste collection infrastructure makes it not only difficult, but also costly, for Illinois residents to properly dispose of the e-wastes they generate. For example, with fewer collections sites in rural areas, residents must drive great distances to drop-off their e-waste.

b. Some Registered Collection Sites Do Not Accept All CEDs or Damaged CEDs.

Not all recyclers and collectors accept all CEDs. Some recyclers and collectors accept only those portions of the e-waste stream that are profitable to recycle. Furthermore, as valuable materials are removed from those items that are collected, what remains is less valuable. For example, after a scrapper removes the copper-containing yoke and cord from a CRT-containing device, many recyclers will not accept the device for processing. Some local governments and recyclers commented that this "cherry picking" is causing them to be inundated with devices that no one else will accept. Devices containing CRTs are a particular problem.

Organizations that collect only a portion of the e-waste stream may also have other practical reasons for not accepting all CEDs, such as limitations on floor space in retail establishments, the inability of manufacturers to reclaim devices that they did not manufacture, and, in the case of some collectors, the lack of access to reliable downstream, end-use outlets.

In addition, of those recyclers that will accept devices containing CRTs, some will not accept devices with a broken CRT. Recyclers who will accept broken CRT-containing devices usually charge a fee to do so on the theory that the broken device is a scrapper-generated waste. It is also worth noting that many recyclers have commented that broken CRT-containing devices present a safety hazard (e.g., sharp glass and potential exposure to heavy metals) for their employees who must handle those devices.

c. Some Registered Collection Sites Are Not Available Year-Round.

Collections are jeopardized once funding is exhausted and/or manufacturers' goals are reached. As reported by stakeholders, this problem worsens at the end of the calendar year. When collection and recycling availability are unreliable, residents are left with limited or no options for e-waste drop-offs. This, in turn, increases the potential for improper e-waste management, including stockpiling and open dumping.

Reported Problems with Goals and Recordkeeping

a. Goals May Not Effectively Apportion Manufacturers' E-Waste Recycling Responsibilities.

Recycling and reuse goals are currently based on the total weight of devices manufacturers sold in Illinois two years prior. However, the weight of devices sold two years prior may not be proportionate to the weight of devices currently being collected for recycling. For example, flat screen televisions sold in the State two years ago are often significantly lighter than CRT-containing televisions currently being collected for recycling.

b. Goals May Underestimate the Expected Useful Life of Devices.

Although manufacturers' individual recycling and reuse goals are based on the weight of devices sold in the State two years before, the expected useful life of devices are typically greater than two years. In most circumstances, a device is expected to arrive in the recycling stream much later than two years after the date it is sold. Therefore, the current method for setting e-waste recycling goals does not accurately estimate manufacturers' actual contributions to the e-waste stream.

c. The Inability to Verify Recycling Data Presents a Challenge to the Current Reporting System.

The convoluted transactions between collectors, recyclers, and manufacturers make it difficult to accurately account for the movement of devices that are collected and recycled. Some recyclers are concerned that the current system for reporting manufacturers' progress towards their goals allows devices to be reported as recycled when they have not, in fact, been recycled. Figure 4 provides a single example of the sort of complex relationships that exist between various market participants.

d. The Underserved County Collection Credit Is Available In Too Many Counties.

Under existing law, manufacturers receive double credit for any CEDs that are collected free of charge in an underserved county. The Act currently defines an underserved county as any county with a population density of 190 persons or less per square mile. As a result, in 85 of Illinois' 102 counties, manufacturers are currently entitled to double credit toward their recycling goals for any CEDs they collect without charge. See Figure 5 for a listing of population density by county.

In practice, this credit reduces the amount of e-waste actually collected throughout the State and fails to promote the fair distribution of e-waste collection opportunities for Illinois residents in areas where collection opportunities are truly lacking.

Figure 1. E-waste Stakeholder Meeting Worksheet

Collection Issues			
1.	Should all registered collectors be required to accept ALL CEDs?		
	a. Regardless of capacity (some retailers don't have room to store all CEDs)	Yes	No
	b. Regardless of cost (several CEDs have a negative value, meaning that the cost to recycle them is greater than the return on any material the device contains)	Yes	No
2.	What specific collection issues are you facing?		
	a. Insufficient collections	Y	N
	b. Cost associated with collections	Y	N
	c. Lack of recycler choices	Please prioritize (1-3)	
	i. Due to inability to charge a unit of local government serving as a collector, if recycler has an OEM contract.		
	ii. Lack of recyclers in area.		
	iii. Lack of recyclers willing to take on more clients.		
	d. No outlet for CRTs	Y	N
3.	Would establishing a convenience standard address existing collection issues?		
	a. Changing the collection infrastructure will help	Y	N
	b. If yes, what minimum criteria should be used:	Please prioritize	
	c. Establish a collection site in every county of the state and at least one collection site for any city with a population of XX,XXX or more. A collection site for a county may be the same as a collection site for a city that meets the threshold population.		
	d. Hold 2 one-day collections per year in every county.		
	e. Establish "reasonably convenient" service areas based on driving distance.		
	f. Another alternative:		
	g. Another alternative:		
4.	Are broken TVs and monitors an issue for you?		
	The law should specify how to handle broken CRTs	Y	N
	If yes, what do you recommend:		
Reporting Issues			
1.	Are new reporting requirements needed?		Y N
	If yes, what should change?		Please prioritize
	a. More frequent reporting of pounds collected and recycled (monthly, quarterly, or semi-annually)		
	b. Cross-check between collectors, recyclers and manufacturers to validate numbers (i.e., all entities have to sign off to verify data are accurate)		
	c. Another alternative:		
2.	Which of the options in 1. above do you think would be most effective in reducing ghost weight?		(a, b, c, or d)
3.	Should Illinois EPA track downstream vendors to assure reuse and recycling?		Y N
	If yes, to what level?		Please prioritize
	a. Two steps		
	b. Through completion		
Fee Issues			
1.	Do you think consumers should be charged a fee for recycling their CEDs?		Y N
	If yes, how so?		Please prioritize
	a. At time of sale		
	b. At time of collection		
	c. All CEDs		
	d. Only certain CEDs, such as CRTs		
	e. Another alternative:		
2.	If a fee were to be allowed, how should it be structured?		Please prioritize
	a. Sliding scale based on type of CED		
	b. Capped at certain amount for all devices		
	c. Each collector determines fee based on local market		
	d. Another alternative:		
3.	What barriers exist to taking receipt of the fee?		
	a.		

[illegible]

Figure 3. Area of State Where E-Waste Collection Infrastructure is Currently Underdeveloped



Figure 4. Following the Pounds

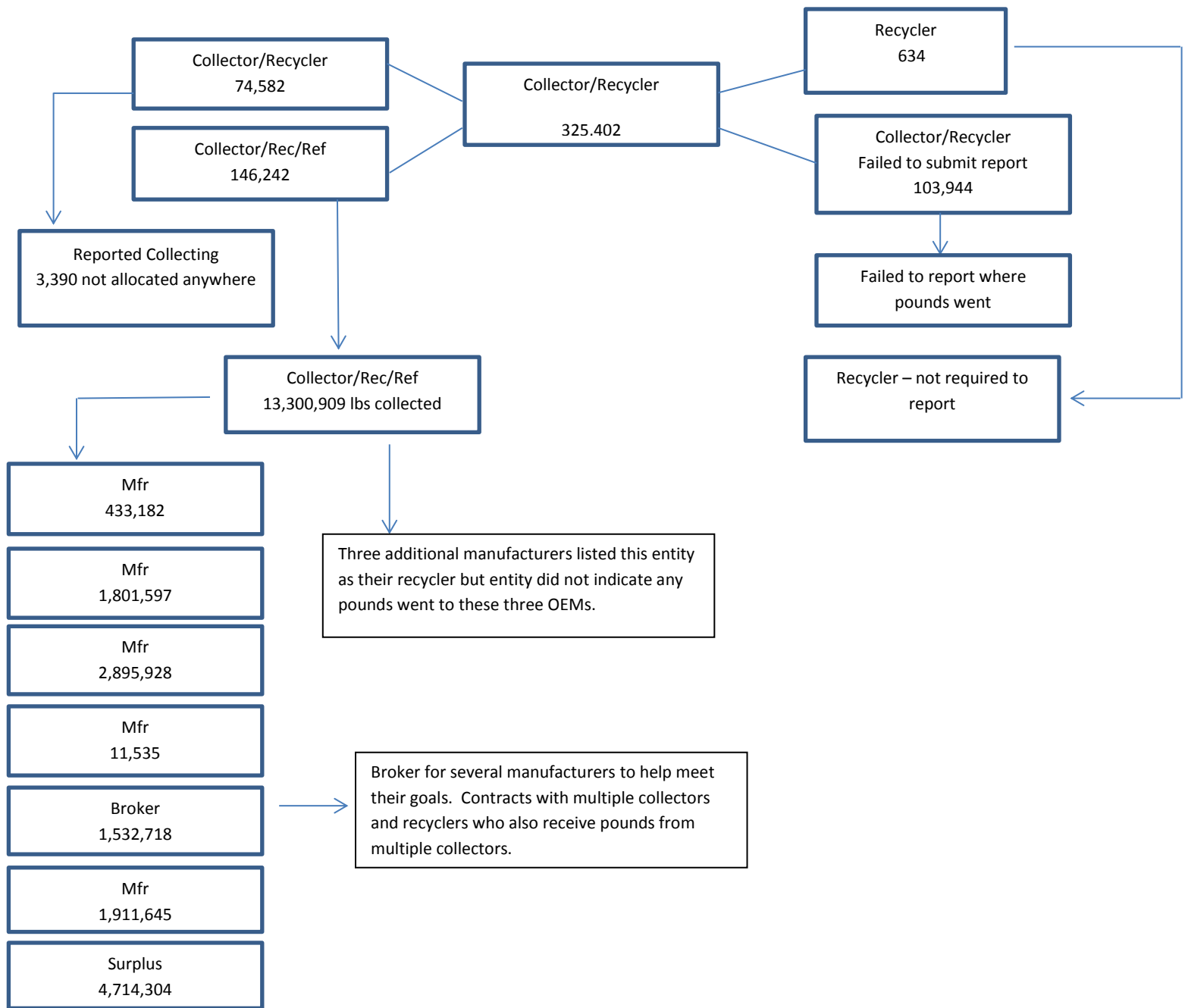


Figure 4. The Act mandates all registered collectors to submit an annual “Collector’s Total Weights Collected” report outlining the number of pounds of CEDs and EEDs collected from residential sources in the previous program year. In addition, registered collectors must designate the registered recycler with whom they are partnering. Registered collectors who are also registered recyclers oftentimes re-report pounds they receive from a collector for processing as part of their pounds they collected, resulting in duplicate reporting. In addition, many collectors send pounds to multiple recyclers who partner with other recyclers who also partner with multiple manufacturers. Complicating the process even further, manufacturers may partner with brokers who may partner with multiple recyclers or even with multiple collectors.

Recyclers are not required to report, unless they are registered as a collector, which results in an inadequate tracking of pounds since the recycler is the key connection to the manufacturer. Additionally, no cross-reference verification requirements exist to track pounds from the collector to a recycler that ultimately ends up with a manufacturer. This inability to verify that the same set of pounds is not being reported multiple times could result in “ghost weight” applied towards a manufacturer’s recycling obligation.

Figure 5. Population Density of Illinois Counties
(Inhabitants per Square Mile of Land Area)

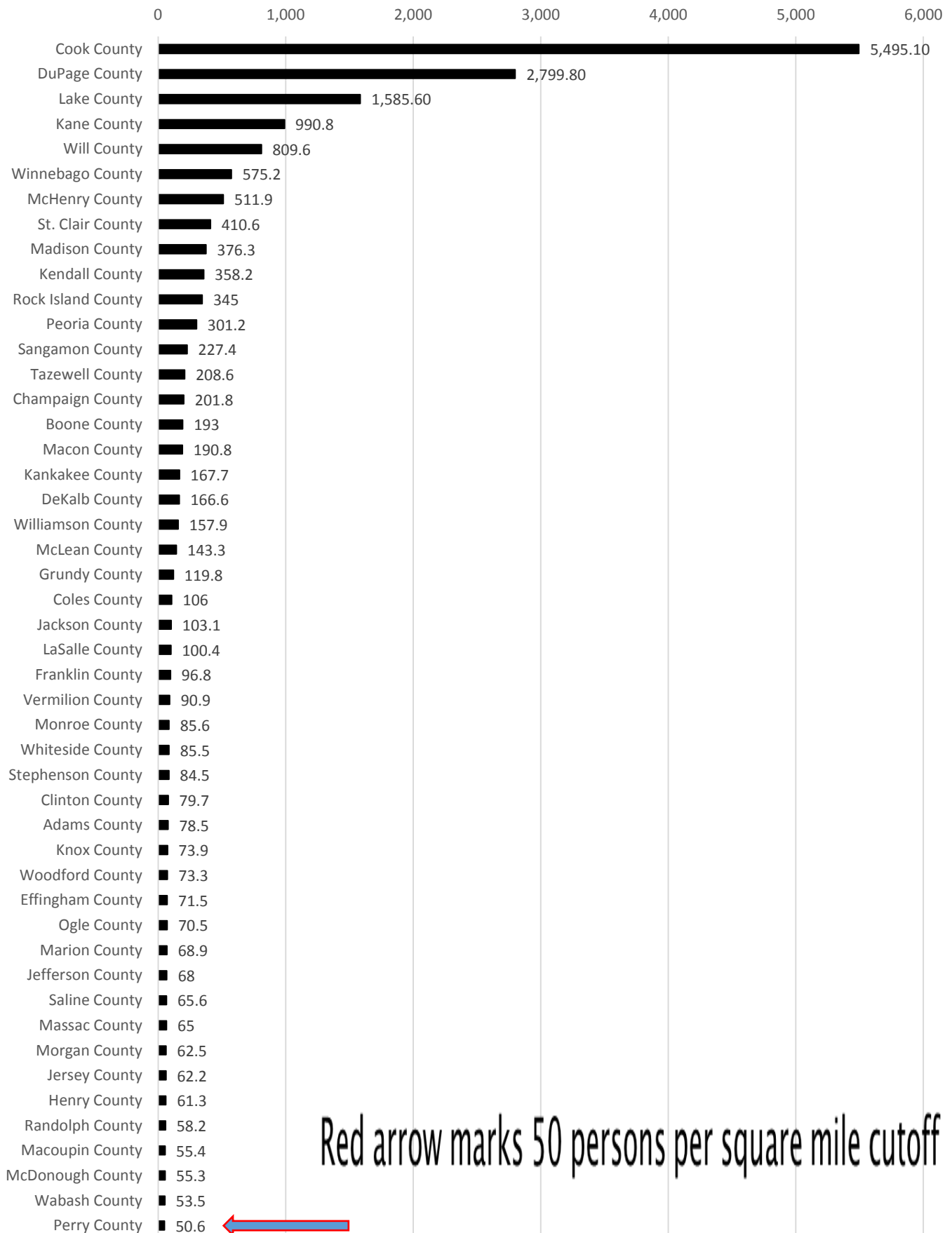


Figure 5 (Continued). Population Density of Illinois Counties
(Inhabitants per Square Mile of Land Area)

